

CLAIMS

What is claimed is:

1. A method for delivering data over a television signal spectrum, comprising:
receiving information and transmitting the data to a wide network delivery
5 system;

transmitting the data to at least one receiver associated with an edge server;
transferring the data to the edge server, storing the data in a storage
element associated with the edge server; and provisioning the data stored in the edge
server to a signal combiner;

10 inserting a signal related to the data into the television signal spectrum, and
broadcasting the television spectrum containing the inserted signal; and

receiving the television signal spectrum containing the inserted signal at a
receiver device, extracting the data from the received television signal spectrum, and
storing the extracted data.

15 2. The method of Claim 1, wherein
the wide network delivery system comprises a satellite; and
a portion of the data is provided with more error protection than specified
for a MPEG2 protocol.

20 3. The method of Claim 1, wherein the data is transmitted using a protocol
having error correction codes at three different layers.

25 4. The method of Claim 3, wherein one of the three different layers includes a
forward error correction code; another of the three different layers includes a cyclic
redundancy check code; and the third layer includes an embedded forward error
correction code.

30 5. The method of Claim 1, wherein
the inserting of the signal related to the data into the television signal
spectrum comprises multiplexing the signal with a conventional analog television signal.

6. The method of Claim 1, wherein
the inserting of the signal related to the data into the television signal
spectrum comprises multiplexing the signal with a conventional digital television signal.

5 7. The method of Claim 1, wherein the receiving device communicates with a
network server via a back channel, said network server being associated with a network
center responsible for the transmitting of the data to the wide network delivery system.

10 8. The method of Claim 7, wherein the network center provides for an
archiving function.

15 9. The method of Claim 7, wherein the receiving device communicates a
receipt of a bad block to the network server via the back channel, and the network server
causes a transmission of a data block to replace the bad block received by the receiver
device.

10. The method of Claim 7, wherein the back channel comprises the Internet.

20 11. The method of Claim 1, wherein the provisioning of the data to the signal
combiner is in response to a request from the network center to the edge server via a back
channel.

25 12. The method of Claim 1, wherein the receiving the data further comprises:
aggregating a plurality of data elements into the data; and
scheduling the data elements for a release into a local market at a specified
release time,

30 13. The method of Claim 12, wherein the provisioning of the data to the signal
combiner is in response to the specified release time.

14. The method of Claim 1, wherein the extracted data stored in the receiver
device is replaced with new data after a period of default time.

15. The method of Claim 14, wherein the period of default time is changed in response to a customer's request.

5 16. The method of Claim 14, wherein the extracted data is made transferable to a storage device in response to a customer's request.

17. The method of Claim 1, wherein the receiving device communicates with a wired device via a home network.

10 18. The method of Claim 1, wherein the receiving device communicates with a wireless device via a home network.

15 19. A method for delivering a content element over a television signal spectrum, comprising:
receiving data and transmitting the content element to a wide network delivery system;
transmitting the content element to a receiver associated with an edge server;
20 transferring the content element to the edge server, storing the content element in a storage element associated with the edge server, and creating an accumulated content element, said accumulated content element being a plurality of content elements received and stored at the edge server over a period of time;
provisioning the accumulated content element to a signal combiner;
25 inserting a signal related to the accumulated content element into the television signal spectrum and broadcasting the television spectrum containing the inserted signal; and
receiving the television signal spectrum containing the inserted signal at a receiver device, extracting the accumulated content element from the received television
30 signal spectrum, and storing the extracted accumulated content element.

20. The method of Claim 19, wherein each content element comprising the accumulated content element is associated with a timestamp, and

a new content element replaces the content element associated with the oldest timestamp among the content elements comprising the accumulated content element.

21. The method of Claim 19, wherein the edge server receives a new content element and replaces a portion of the accumulated content element with the new content element, using a mark indicated on the portion by a component comprising a network center.

22. The method of Claim 21, wherein the network center provides for an archiving function.

23. The method of Claim 19, wherein the content element is transmitted using a protocol having error correction codes at three different layers.

24. The method of Claim 23, wherein one of the three different layers includes a forward error correction code; another of the three different layers includes a cyclic redundancy check code; and the third layer includes an embedded forward error correction code.

25. The method of Claim 19, wherein a portion of the accumulated content element becomes unavailable to a customer in response to a request transmitted by a network center to the edge server via a back channel.

26. The method of Claim 19, wherein each content element comprising the extracted accumulated content element at the receiving device is associated with a timestamp; and
the content element associated with the oldest timestamp among the content elements comprising the extracted accumulated content element at the receiving device is replaced with a new content element.

27. The method of Claim 19, wherein a portion of the extracted accumulated content element becomes unavailable to a customer in response to a mark indicated on the portion by a component comprising a network center.

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28. The method of Claim 19, wherein a portion of the extracted accumulated content element becomes unavailable in response to a request transmitted by a network center to the receiving device via a back channel.

10 29. The method of Claim 19, wherein a portion of the extracted accumulated content element is made transferable to a storage element in response to a customer's request.

15 30. The method of Claim 19, wherein the wide network delivery system comprises a satellite.

20 31. The method of Claim 19, wherein the receiving device comprises a communication port for communicating via the Internet with a network center responsible for the transmitting of the content element to the satellite.

32. The method of Claim 19, wherein the receiving device comprises a communication port for transferring home information via a home network.

25 33. The method of Claim 19, wherein the receiving device communicates with a wired device via a home network.

34. The method of Claim 19, wherein the receiving device communicates with a wireless device via a home network.

30 35. A method for delivering a plurality of content elements over a plurality of television signal spectrums, comprising:

receiving data and transmitting the plurality of content elements to a wide network delivery system;

transferring the plurality of content elements to a plurality of edge servers located in a local market, each of said edge servers corresponding to at least single

5 content element;

each edge server storing its corresponding content element, causing an insertion of its corresponding content element into its corresponding television signal spectrum;

10 broadcasting the plurality of television signal spectrums, each spectrum containing the inserted signal related to its corresponding content element; and

receiving the plurality of television signal spectrums, each spectrum containing the inserted signal related to its corresponding content element, extracting a plurality of received content elements from the plurality of the plurality of television signal spectrums, and storing a plurality of extracted received content elements.

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36. The method of Claim 35, wherein a network center for the transmitting of the plurality of content elements to the wide network delivery system communicates via a back channel with a receiving device for the receiving of the plurality of television signal spectrums.

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37. The method of Claim 36, wherein the network center provides for an archiving function.

25 38. The method of Claim 35, wherein each of the plurality of content elements is transmitted using a protocol having error correction codes at three different layers.

30 39. The method of Claim 38, wherein one of the three different layers includes a forward error correction code; another of the three different layers includes a cyclic redundancy check code; and the third layer includes an embedded forward error correction code.

40. The method of Claim 36, wherein the receiving device communicates a receipt of a bad block to the network center via the back channel, and the network center causes a transmission of a data block to replace the bad block received by the receiver device.

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41. The method of Claim 36, wherein the receiving device transfers home information via a home network.

42. The method of Claim 35, wherein the causing the insertion of its
10 corresponding content element into its corresponding television signal spectrum at each edge server is in response to a request from the network center to the edge server via a back channel.

43. The method of Claim 35, wherein each edge server is associated with a
15 signal combiner, and the causing the insertion of its corresponding content element into its corresponding television signal spectrum comprises provisioning the content element to the signal combiner, wherein the signal combiner multiplexes the signal related to the content element and a television signal.

44. The method of Claim 35, wherein the wide network delivery system
20 comprises a satellite.

45. The method of Claim 36, wherein the back channel comprises the Internet.

25 46. A system for delivering data over a television signal spectrum, comprising:
a network center for receiving information and transmitting the data to a wide network delivery system;

the wide network delivery system for receiving the data from the network center and forwarding the data to a receiver associated with an edge server;

30 the edge server for storing the data received by the receiver from the wide network delivery system and for causing an insertion of a signal related to the data into a television signal spectrum;

a transmission facility for transmitting the television signal spectrum containing the inserted signal; and

a receiving device for receiving the television signal spectrum containing the inserted signal, extracting the data from the received television signal spectrum, and
5 storing the extracted data.

47. The system of Claim 46, wherein the receiving device comprises a communication port for communicating with the network center.

10 48. The system of Claim 46, wherein the network center provides for an archiving function.

49. The system of Claim 46, wherein the data is transmitted using a protocol having error correction codes at three different layers.
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50. The system of Claim 49, wherein one of the three different layers includes a forward error correction code; another of the three different layers includes a cyclic redundancy check code; and the third layer includes an embedded forward error correction code.
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51. The system of Claim 46, wherein the wide network delivery system comprises a satellite

25 52. The system of Claim 46, wherein the network center communicates via the Internet with the receiving device and the edge server.

53. The system of Claim 46, wherein the receiving device comprises a communication port for transferring home information via a home network.

30 54. The system of Claim 46, wherein the extracted data is provided to an information kiosk.

55. The system of Claim 46, wherein the extracted data is provided to a television.

56. The system of Claim 46, wherein the extracted data is provided to a personal computer.

57. The system of Claim 46, wherein the extracted data is provided to a mobile device.

58. The system of Claim 46 wherein the extracted data is provided to a storage device.

59. The system of Claim 46 wherein the extracted data is provided to a display device.

60. The system of Claim 46 wherein the extracted data is provided to an audio device.

61. The system of Claim 53, wherein the receiving device communicates with a wired device via the home network.

62. The system of Claim 53, wherein the receiving device communicates with a wireless device via the home network.

63. A system for delivering a plurality content elements over a plurality of television signal spectrums, comprising:
a network center for receiving information and transmitting the plurality of content elements to a wide network delivery system;
the wide network delivery system for receiving the plurality of data from the network center and forwarding the plurality of data to a plurality of local systems associated with a local market, each local system being associated with at least single content element;

each of the local systems comprising a receiver to receive its corresponding content element from the wide network delivery system, an edge server for storing its corresponding content element and for causing an insertion of the corresponding content element into a television signal spectrum associated with its corresponding local system, and a transmission facility for transmitting the television signal spectrum inserted with a signal related to the corresponding content element; and

a receiving device for receiving the plurality of television signal spectrums, each spectrum containing its corresponding inserted signal, extracting a plurality of received content elements from the plurality of received television signal spectrums, and storing a plurality of extracted and received content elements.

64. The system of Claim 63, wherein the receiving device communicates with the network center via a back channel.

65. The system of Claim 63, wherein the network center provides for an archiving function.

66. The system of Claim 63, wherein each of the plurality of content elements is transmitted using a protocol having error correction codes at three different layers.

67. The system of Claim 66, wherein one of the three different layers includes a forward error correction code; another of the three different layers includes a cyclic redundancy check code; and the third layer includes an embedded forward error correction code.

68. The system of Claim 63, wherein the receiving device communicates a receipt of a bad block to the network center via the back channel.

69. The system of Claim 63, wherein the insertion of the corresponding content element into the television signal spectrum associated with its corresponding local system at each edge server is in response to a request from the network center to the edge server via a back channel.

70. The system of Claim 63, wherein the wide network delivery system comprises a satellite.

71. The system of Claim 63, wherein each edge server is associated with to a signal combiner, and the causing the insertion of its corresponding content element into its corresponding television signal spectrum comprises provisioning the content element to the signal combiner, wherein the signal combiner multiplexes the signal related to the content element and a television signal.

72. The system of Claim 63, wherein the network center communicates via the Internet with the receiving device and each edge server associated with the plurality of local systems.

73. The system of Claim 63, wherein the receiving device communicates with a wired device via a home network.

74. The system of Claim 63, wherein the receiving device communicates with a wireless device via a home network.

75. A method for delivering data over a television signal spectrum, comprising: receiving information and transmitting the data to a wide network delivery system;

transferring the data to a server;

storing the data in a storage element associated with the server, inserting a signal related to the data into the television signal spectrum, and broadcasting the television signal spectrum containing the inserted signal;

receiving the television signal spectrum containing the inserted signal, extracting the data from the television signal spectrum containing the inserted signal, and storing the extracted data; and

receiving information regarding the extracted data via a back channel.

76. The method of Claim 75, wherein the wide network delivery system comprises a satellite.

5 77. The method of Claim 75, wherein the receiving and transmitting the data to a wide network delivery system is provided by a network center.

78. The method of Claim 77, wherein the network center provides an archiving function.

10 79. The method of Claim 75, wherein the data is transmitted using a protocol having error correction codes at three different layers.

15 80. The method of Claim 79, wherein one of the three different layers includes a forward error correction code; another of the three different layers includes a cyclic redundancy check code; and the third layer includes an embedded forward error correction code.

81. The method of Claim 75, wherein the back channel comprises the Internet.

20 82. The method of Claim 75, wherein the receiving device communicates with a wired device via a home network.

83. The method of Claim 75, wherein the receiving device communicates with a wireless device via a home network.

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